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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/531,918

03/21/2000

David Scott Taubman

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06/24/2004

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EXAMINER

CHEN, WENPENG

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 06/24/2004

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/531,918

Applicant(s)

TAUBMAN ET AL.

Examiner

Wenpeng Chen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 11-16, 19-23, and 26-28 is/are allowed.
6) ☒ Claim(s) 9, 10, 17, 18, 24 and 25 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Examiner's responses to Applicant's remark

1. Applicants' arguments filed on 4/30/2004 have been fully considered. Applicant's arguments with respect to claims 9-10, 17-18, and 24-25 have been considered but are moot in view of the new ground(s) of rejection due to the amendments. Please note that the Applicants did not traverse the Examiner's rejection to Claim 16 in paper #8 under 35 U.S.C. 103(a) as being unpatentable over Lei et al. (US patent 6,356,665) in view of Wang (WO 00/10131.) The amended Claim 9 is a claim covering a scope broader than the Claim 16 discussed in paper #8.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-10, 17-18, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lei et al. (US patent 6,356,665 cited previously) in view of Wang (WO 00/10131 cited previously.)

For Claims 9-10, Lei teaches a method for coding a set of numbers represented by a set of bit-planes having an arrangement between a highest and a lowest significance, comprising the step of:

-- generating a bit stream including a set of significance information and a set of refinement information that describes a current one of the bit-planes in terms of a tree structure having a hierarchical arrangement of leaves such that the significance information for the leaves of the tree structure are described in the bit stream in an order that is determined by an arrangement of zero values in a tree structure for the bit-plane having a next higher significance. (column 5, line 21 to column 6, line 65; Figs. 5, 6A, and 6B; Also see explanation in paper #8)

Because Lei also teaches the apparatus corresponding to the above-discussed methods (Fig. 1), Lei also teaches the apparatuses of Claims 24-25.

For Claims 17, Lei further teaches in the system:

-- filter that generates a set of coefficients in response to an input image, the coefficients represented by a set of bit-planes having an arrangement between a highest and a lowest significance; (column 3, lines 45-63; column 5, line 21 to column 6, line 65; Figs. 5, 6A, and 6B; the above cited passages and explanation with regard to the method claims; Fig. 8; Fig. 8 clearly shows that sampling filters decompose the input image into four frequency subbands in each stage.),

-- encoder that generates a compressed image for the input image by generating a bit stream that describes each bit-plane in terms of a tree structure having a hierarchical arrangement of leaves such that the leaves of the tree structure are described in the bit stream in an order that is determined by an arrangement of zero values in a tree structure for the bit-plane having a next higher significance. (Fig. 1; column 2, lines 46-53; column 4, lines 14-49; column 6, line 65 to column 7, line 67; Figs. 5, 6A, 6B; column 4, lines 56-65; Figs. 6A and 6B; column 8, lines 53-

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67; column 5, line 21 to column 6, line 65; Figs. 5, 6A, and 6B; the above cited passages and explanation with regard to the method claims)

For Claim 18, the above cited passages and explanation with regard to the method claims also teaches the claims.

However, Lei does not teach that the refinement information for a current one of the bit-planes follows the significance information for the current one of the bit-planes in the bit stream.

Wang teaches an embedded quadtree coding in which the refinement information for a current one of the bit-planes follows the significance information for the current one of the bit-planes in the bit stream. (Fig. 9; page 8, lines 23-30)

As pointed out by Wang, refinement information and significance information can be arranged in any order. The order shown in Fig. 9 of Wang ensures high PSNR.

It is desirable to have high PSNR. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to arrange Lei's refinement information and significance information according to the order shown in Wang's Fig. 9 because the combination improves PSNR.

Allowable Subject Matter

4. Claims 11-16, 19-23, and 26-28 are allowed.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the method of Claim 11, the system of Claim 19, and the apparatus of Claim 26 as explained in paper #8.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular

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communications and 703-872-9306 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Wenpeng Chen
Examiner
Art Unit 2624

June 23, 2004

A handwritten signature in black ink, appearing to read 'Wenpeng Chen', written in a cursive style.